Public access to publicly funded research: how and why mandatory policies by funders?

Elena Giglia,
Università degli Studi di Torino, elena.giglia@unito.it

Abstract

This contribution is aimed at presenting the principles upon which rely the mandatory Open Access policies of over 40 funding organizations worldwide. Most of them are in the biomedical field. Policies require that outputs of research publicly funded must be publicly available by self-archiving in an Open Archive. One of the latest funders to adopt such a policy is Telethon Foundation. The European Union also mandates Open Access for researches granted within the 7 Framework Program.

_____

The mandates

In the latest years several funders and public organizations at national and international level claimed with public statements for free access to publicly funded research: among the others, UN World summit on Information Society in 2003, OECD in 2004, US National Institutes of Health in 2007/8, European Research Council in 2008, European Union in 2010 [1].

The underlying principle is that publicly funded research outputs have to be publicly available. This is one of the key aspects of the Open Access movement we were talking about in our last column: Open Access means free, unrestricted, immediate access to peer-reviewed literature for anyone, anywhere, in any time [2].

A free access actually fosters and speeds up scientific progress, and a wider dissemination maximizes the impact of any research. Moreover, as John Houghton puts it, «Because discovery is a cumulative process, with new knowledge building on earlier findings, the dissemination of research findings is crucial to ensuring that the returns on the investment are realized» [3]. Funding agencies are sensitive to these arguments.

Based on this logic, they are adopting "mandatory policies": it means that a funder requires the results stemming from researches granted by its funds to be publicly available. Please notice that no mandatory policy requires Open Access "publishing" in an Open Access journal (so called Gold road to OA); policies just mandate "depositing" in an Open Archive the pre-print or post-print of the work published in a traditional scientific journal, according to the publishers' copyright agreement (so called Green road to OA). As we stressed in our last column, Green road or self-archiving is an immediate way to provide Open Access: it relies upon the author's choice and willing, it is at basically zero costs, and takes only few minutes to deposit; in return the paper becomes immediately more visible, more usable and therefore potentially more citable. If a researcher chooses (but it's a free choice) to publish in an Open Access journal which requires an Article Processing Fee, many funders pay the fee; the European Union reimburse it [4].

Mandatory policies are growing day by day. In the biomedical field, the most striking examples are represented by National Health and Medical Research Council (Australia), Canadian Institutes of Health Research (Canada), INSERM (France, only "encourages" not "requires"), Health Research Board (Ireland), Medical Research Council (UK) and of course NIH (USA). On this same path, the FRPAA – Federal Research Public Access Act (http://www.arl.org/sparc/advocacy/frpaa/index.shtml) is being debated in the US Senate to extend the Public Access policy to all the 11 National research Agencies. We talked about NIH and its policy in our last column.

A list of both institutional and funders' policies is available in the **ROARMAP** project (http://www.eprints.org/openaccess/policysignup/): as of October, 30th there are 244 policies worldwide, and 21 proposed policies under debate. The **SHERPA-JULIET** project

(http://www.sherpa.ac.uk/juliet/) lists only the funders' policies: it details whether, what, when and where to deposit. Mandatory policies in fact can require a specific archive or can sometimes tolerate an "embargo" period of 6 or 12 months, i.e. a delay in deposit after publication. SHERPA-JULIET works in parallel to and is connected to the **SHERPA-RoMEO** project (http://www.sherpa.ac.uk/romeo/), which lists the publishers' copyright policies according to which you can or can't deposit your work. When you run a search for your journal or publisher in RoMEO, the database shows immediately the compliance with any funders' mandate. Fig.1 give an example of the copyright policy of Nature Publishing Group, publisher of «Spinal cord»: they allow the immediate deposit of pre-print, and the deposit of post-print with a six-month embargo, being compliant with many funders' mandates.
Let's see some of the policies which might affect researchers in Europe in the biomedical field.

Fig 1: copyright policy for «Spinal cord» and compliance with funders' mandate.

European Union Open Access Pilot Project

At an institutional level, the European Union promotes openness for the benefit of innovation, and facilitates the diffusion of knowledge in its three roles of policy-making body, funding body, and capacity-making body. The European Community Treaty (Lisbon Treaty) states that «Union shall have the objective of strengthening its scientific and technological bases by achieving a European Research Area in which researchers, scientific knowledge and technology circulate freely» [5]. ERA, the European Research Area, is supported mostly by two initiatives. The first one is "A Digital Agenda for Europe" (COM(2010)245). In point 5.2.5 we read «publicly funded research should be widely disseminated through Open Access publication of scientific data and papers», in order to support which «the Commission will appropriately extend current Open Access publication requirements». The second Communication, "Innovation Union" (COM(2010)546) is based on the so called "fifth freedom", which is not only the free movement of researchers but also the free movement of innovative ideas. The Commitment 20 states: «The Commission will promote open access to the results of publicly funded research. It will aim to make open access to publications the general principle for projects funded by the EU research Framework Programs» [6].
Within the current Seventh Framework Program, the Open Access Pilot project (http://tinyurl.com/2f47hwh**)** mandates that each researcher granted by the EU in six pilot disciplines must deposit the outputs in an Open Archive.
"Health" is one of the selected six disciplines. Open Archives are repositories of digital objects; they can be institutional or subject-based. In Europe, UKPubMedCentral (http://ukpmc.ac.uk/) is the most complete Open Archive in Biomedicine. A list of biomedical Open Archives can be browsed or searched in **DOAR** – Directory of Open Access Repositories (http://tinyurl.com/38dxkh8). A list of publishers' copyright policies is displayed in the SHERPA-RoMEO project (http://www.sherpa.ac.uk/romeo/): of course, you can archive your work only according to your publisher's policy. For those who give no permission, it is possible however to deposit metadata only. A **Guide to Intellectual Property Rules in 7FP** is also available (ftp://ftp.cordis.europa.eu/pub/fp7/docs/ipr_en.pdf).
The European project **OPENAIRE** (http://www.openaire.eu/) is aimed at establishing underlying structures for researchers to support them in complying with the Open Access Pilot, including a central repository.

Wellcome Trust, Telethon Foundation and the others

In the biomedical field, **Wellcome Trust** (http://www.wellcome.ac.uk/) has been a pioneer: in October, 2006, it became one of the first research funding agencies in the world to require Open Access to all publications resulting from its grants.

Sir Marc Walport, Director of Wellcome Trust, stresses in a short but pregnant video that any research is not complete until published [7]. "Published" has to be considered in its etymological meaning of "made public" to anyone, anywhere, anytime. By maximizing the dissemination of the research outputs, the impact is also maximized and therefore the value of a funded research. In 2009, the compliance with the policy was at 44% [8]. Wellcome Trust was among UKPubMedCentral funding organizations; its policy has been a template for several other funding bodies.

Telethon Foundation (http://www.telethon.it/english/default.aspx) adopted a mandatory Open Access policy in July, 2010. In their statement we read «Telethon therefore supports unrestricted access to the published output of research as a fundamental part of its charitable mission and a public benefit to be encouraged wherever possible», which sounds like a keen commitment towards Open Access [9]. Telethon joined UKPubMedCentral project, and shares its common approach. UKPubMedCentral is also the designed open archive where to deposit. Telethon accepts an embargo of maximum six months; if the publisher does not comply, Telethon can provide authors covering the fees for the "Open Choice" many traditional scientific publishers offer (i.e. under the payment of a fee, the article is immediately put Open Access even in a subscription-based journal).

Advantages, or: in return of Open Access Policies

The biomedical scientific community receives benefits from papers made freely available in Open Access both as information producer and information consumer.

As authors, researchers increase their visibility and their impact. Their papers, widely disseminated, become more usable and therefore potentially more citable. Studies on the citation advantage in Open Access show a 300/450% increase in citations in Medicine [10]. Moreover, they can have an impact not only on the academic community, but on the whole medical community, i.e. the practitioners who read, work, keep up to date but don't publish and therefore don't cite.

As readers, researchers can have free access to a growing number of peer-reviewed papers. A recent study by Björk et al. on articles published in 2008 finds that in average 20, 4% of the current scientific literature is available in some form of Open Access [11]. If you run a search in PubMed for "muscular dystrophy physical treatment" you get 433 articles, 76 of which (18%) results as "free full text" in the Filters at the right upper end of the result page. If you run a search for "stroke rehabilitation" you find 2,640 free full texts out of 12,916 (20%). According to what we have said about Open Access mandatory policies, a further advantage is that this (growing) 20% represents the results of researchers funded – and therefore selected and evaluated among lots, before funding – by prestigious funding bodies. It is an indirect seal of quality.

As readers and reviewers, a wider access ensures most accurate reviews; it avoids inefficient duplications; and enhances international and interdisciplinary collaborations.

A last advantage for researchers as readers is that the availability of free full text enables new technologies like text mining and data mining which unlock easier and more effective paths to the researchers, fostering and speeding the progress of knowledge. The cited UKPubMedCentral (http://ukpmc.ac.uk/) offer new value-added services: sensors techniques operating on open data and texts open direct, seamless connections from relevant terms found within abstracts and full-text article to gene, protein and chemical compound free databases, such as UniProt (http://www.uniprot.org/) and CheBI (http://www.ebi.ac.uk/chebi/). You can access these sources directly from your retrieved items, opening the "Bioentities" label displaying above the record or looking at the box on the right side of the screen (Fig. 2). Then a list of bioentities found in the full text appears, and just by clicking on the term you can quickly access external reliable sources with pre set searches right for this term. Research becomes quicker, broader, more effective and surely time-saving.

Fig. 2 UKPubMedCentral text mining with link to external sources for Bioentities

[1] See respectively http://www.itu.int/wsis/index.html; http://www.oecd.org/document/0,2340,en_2649_34487_25998799_1_1_1_1,00.html; http://publicaccess.nih.gov/; http://erc.europa.eu/pdf/ScC_Guidelines_Open_Access_revised_Dec07_FINAL.pdf; http://ec.europa.eu/information_society/digital-agenda/documents/digital-agenda-communication-en.pdf

[2] Giglia, E. Open access to scientific research: where are we and where are we going? Facts and figures on the occasion of the 2010 Open Access Week (October 18-24), European Journal of Physical and Rehabilitation Medicine, 2010 September;46(3):461-9, available at http://www.minervamedica.it/en/journals/europa-medicophysica/article.php?cod=R33Y2010N03A0461.

[3] Houghton, J, Economic and Social Return on Investment in Open Archiving Federally Funded Research Outputs, Report, August 2010. Available at http://www.cfses.com/FRPAA/.

[4] Funder policies and fee payments (BioMedCentral), http://www.biomedcentral.com/info/authors/funderpolicies; FP7 Grant Agreement – Annex II – Par. II.16, available at ftp://ftp.cordis.europa.eu/pub/fp7/docs/fp7-ga-annex2_en.pdf, p. 18.

[5] Consolidated version of the Treaty on the Functioning of the European Union, art. 179. Available at http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=OJ:C:2010:083:0047:0200:EN:PDF, p. 128

[6] See respectively 'A Digital Agenda for Europe' (COM(2010)245), available at http://ec.europa.eu/information_society/digital-agenda/documents/digital-agenda-communication-en.pdf, p. 23; and "Innovation Union" (COM(2010)546), available at http://www.leru.org/files/general/innovation-union-communication_en.pdf, p. 19. See also Ramjoué, C. Open Access in the European Research Area, 2010, available at http://hdl.handle.net/2318/714.

[7] See http://www.wellcome.ac.uk/About-us/Policy/Spotlight-issues/Open-access/index.htm.

[8] Kiley, R. Analysis of where Wellcome-funded authors publish: 2009 data, blog post, 1 July 2010. Available at http://ukpmc.blogspot.com/2010/07/analysis-of-where-wellcome-funded.html.

[9] Telethon Open Access policy, available at http://www.telethon.it/sites/researchers/open/default.aspx.

[10] See the table in Swan, A. The Open Access citation advantage: Studies and results to date. Technical Report, 2010, available at http://eprints.ecs.soton.ac.uk/18516/, p. 18.

[11] Björk, B.C. et al. 2010 Open Access to the Scientific Journal Literature: Situation 2009. PLoS ONE 5(6): e11273, available at http://www.plosone.org/article/info:doi/10.1371/journal.pone.0011273.